

## **REMARKS**

### **Status of Claims**

Claims 1, 3, 6-10, 13-14, 16-21 and 23-26 are pending, of which claims 1, 9 and 23 are independent.

Claims 1, 9 and 23 have been amended to correct informalities in the claim language and to include the subject matter of original claims 5 and 12. Claims 5 and 12 have been cancelled without prejudice. Care has been taken to avoid introducing new matter.

### **Novelty under 35 U.S.C. § 102**

Claims 1, 3, 5-10, 12-14, 16-17 and 24-25 were rejected under 35 U.S.C. § 102(b) as being anticipated by Bertram et al. (US 2003/0042850). This rejection is traversed for at least the following reasons.

Applicants respectfully remind the Examiner that the factual determination of lack of novelty under 35 U.S.C. § 102 requires the identical disclosure in a single reference of each element of a claimed invention, such that the identically claimed invention is placed into the possession of one having ordinary skill in the art. *Helifix Ltd. v. Blok-Lok, Ltd.*, 208 F.3d 1339, 54 USPQ2d 1299 (Fed. Cir. 2000); *Electro Medical Systems S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 32 USPQ2d 1017 (Fed. Cir. 1994). There are significant differences between the claimed phosphor element and the EL device disclosed by Bertram that would preclude the factual determination that Bertram identically describes the claimed phosphor element within the meaning of 35 U.S.C. § 102.

Applicants respectfully submit that Bertram fails to disclose that the organic material is chemically absorbed to at least one part of the surface of the inorganic phosphor layer, as recited

by amended claims 1 and 9. In rejecting original claims 5 and 12, the Examiner asserts that paragraphs [0023] and [0029] of Bertram disclose the features of claims 5 and 12. Applicants disagree.

Applicants respectfully submit that it is known to one of ordinary skill in the art that the state of “chemically absorbed” means a covalent binding state. Thus, the state that the organic material is chemically absorbed to at least one part of the surface of the inorganic phosphor layer means a covalent binding state between the organic material and the surface of the inorganic phosphor layer (or particle).

In contrast, Bertram merely discloses, at paragraph [0023], that the capping molecules comprising functional units are linked to the surface of the quantum dots, and at paragraph [0029], that the quantum dots are embedded in a matrix. The terms “linked” or “embedded” merely refer to a physically contacting state, and do not mean the chemical absorption having a covalent binding state. As such, it is clear that Bertram fails to disclose that the organic material is chemically absorbed to at least one part of the surface of the inorganic phosphor layer, as recited by amended claims 1 and 9.

Further, it is clear that Bertram fails to identically disclose an oxide or a composite oxide including at least one kind of element selected from a group of Zn, Ga, In, Sn and Ti, within the meaning of 35 U.S.C. § 102. Although paragraph [0021] of Bertram appears to disclose semiconductor compounds, the disclosed semiconductor compounds do not include any “oxides” of Zn, Ga, In, Sn and Ti. In fact, the disclosed materials do not include any oxides. Although the Examiner asserts that Group II-VI semiconductor material may include ZnO and InO, it is clear that Bertram fails to disclose such oxides. As such, Bertram fails to disclose the above identified feature of claims 1 and 9 within the meaning of 35 U.S.C. § 102. Further, the

Examiner's reliance on inherency fails because the Examiner fails to provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). Mere fact that some other documents disclose that Group II-VI semiconductor material may include ZnO and InO does not establish that Bertram necessarily discloses ZnO or InO as semiconductor compounds for the quantum dots. Moreover, the Examiner fails to provide any technical or factual basis that ZnO and InO can be utilized as the material for the quantum dots of Bertram.

Based on the foregoing, Applicants respectfully submit that since Bertram fails to identically disclose the above discussed features of claims 1 and 9 within the meaning of 35 U.S.C. § 102, claims 1 and 9 and all claims dependent thereon are patentable over Bertram. Thus, Applicants respectfully request that the Examiner withdraw the rejection of claims 1, 3, 6-10, 13-14, 16-17 and 24-25 under 35 U.S.C. § 102.

### **Patentability under 35 U.S.C. §103**

Claim 18 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bertram et al. as applied to claim 1, and further in view of Watanabe et al. (US 2002/0015859). Claims 19-21, 23 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bertram et al. in view of Koyama (US 2004/0207578). These rejections are traversed for at least the following reasons.

Regarding claims 18-21, Applicants incorporate herein the arguments previously advanced in traversal of the rejection under 35 U.S.C. § 102(b) predicated upon Bertram. The additional cited references do not teach or suggest the above discussed features of amended

claim 1, which are missing from Bertram. Therefore, any combination of Bertram, Watanabe and/or Koyama still fails to disclose the claimed features, and it would not have been obvious to add these features to such a combination. Accordingly, claims 18-21 are patentable over the cited references.

Regarding claims 23 and 26, Applicants incorporate herein the arguments previously advanced in traversal of the rejection under 35 U.S.C. § 102(b) predicated upon Bertram. Claim 23 recites that the semiconductor host crystal includes an oxide or a composite oxide including at least one kind of element selected from a group of Zn, Ga, In, Sn and Ti, and the organic material is chemically absorbed to at least one part of the surface of the inorganic phosphor layer, which are not disclosed by the cited references as discussed above. Accordingly, claims 23 and 26 are patentable over the cited references.

Based on the foregoing, Applicants respectfully request that the Examiner withdraw the rejection of claims 18-21, 23 and 26 under 35 U.S.C. § 103(a).

### CONCLUSION

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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